

In the Claims:

1-23. (Cancelled)

24. (New) A wavekey network comprising:

- a network controller;

- a plurality of nodes, each node communicating with said network controller through a management link connecting a selected node, among said plurality of nodes, to said network controller, said each node comprising:

- a node controller;

- a respective plurality of access ports; and

- a respective plurality of inter-nodal interfaces;

and

- a plurality of links, each link connecting inter-nodal interfaces of a respective node pair and supporting optical signals occupying channels of different wavelength bands, said channels comprising:

- a control channel carrying control signals; and

- data channels, each data channel carrying data of a respective connection from an access port of a source node to an access port of a destination node, said each data channel further modulated by a respective wavekey of at least one dither tone;

- said node controller configured to communicate nodal information to said network controller, said nodal information comprising, for each data channel of each link emanating from said each node:

- an identifier of a connection traversing said each data channel;

- an identifier of a central wavelength of said each data channel; and

- an identifier of a current wavekey modulating said central wavelength;

and

said network controller configured to determine continuity of said connection according to nodal information received from all nodes of said plurality of nodes.

25. (New) The wavekey network of claim 24 wherein said nodal information further comprises an identifier of a software version, said identifier including a text string characterizing a current software load of said each node.

26. (New) The wavekey network of claim 24 wherein said identifier of said current wavekey includes identifiers of frequencies of constituent dither tones of said current wavekey.

27. (New) The wavekey network of claim 24 wherein said nodal information further comprises identifiers of structural components of said each node.

28. (New) The wavekey network of claim 24 wherein said node controller of said each node distributes said nodal information to each other node so that each node possesses nodal information of all nodes of said plurality of nodes.

29. (New) The wavekey network of claim 28 wherein said selected node communicates said nodal information of all nodes to said network controller.

30. (New) The wavekey network of claim 28 wherein said node controller is configured to employ a modified version of a standardized protocol for communicating said nodal information to said network controller, said modified version structured to permit inclusion of said nodal information within control packets conforming to said standardized protocol.

31. (New) The wavekey network of claim 30 wherein said node controller selects said standardized protocol to be the Open-Shortest-Path-First protocol.

32. (New) A method of verifying continuity of paths in a wavekey network comprising a plurality of nodes interconnected through a plurality of multi-channel links, each node having a node controller, the method comprising:

distributing, by said node controller, nodal information to each other node, said nodal information comprising:

an identifier of a respective connection traversing each data channel of each link emanating from said each node;

an identifier of a central wavelength of said each data channel; and

an identifier of a current wavekey modulating said central wavelength;

and

communicating to a network controller, from a gateway node selected from among said plurality of nodes, nodal information pertinent to said each node to enable said network controller to determine continuity of said respective connection.

33. (New) The method of claim 32 further comprising said node controller inserting in said nodal information an identifier of a current software version, said identifier including a text string characterizing a current software load of said each node.

34. (New) The method of claim 32 wherein said identifier of said current wavekey includes identifiers of frequencies of constituent dither tones of said current wavekey.

35. (New) The method of claim 32 further comprising said node controller inserting in said nodal information identifiers of structural components of said each node.

36. (New) The method of claim 32 further comprising said node controller indicating, in said nodal information, a working state of said each data channel.

37. (New) The method of claim 32 further comprising said node controller employing a modified version of a standardized protocol, said modified version enabling inclusion of said nodal information within control packets conforming to said standardized protocol.

38. (New) The method of claim 37 further comprising selecting said standardized protocol to be the Open-Shortest-Path-First protocol.

39. (New) A node in a wavekey network, said node comprising:

a node controller;

a plurality of access ports; and

a plurality of link interfaces, each link interface coupled to a link to another node of said wavekey network, said link supporting optical signals occupying channels of different wavelength bands, said channels comprising:

a control channel carrying control signals; and

data channels, each data channel carrying data of a respective connection originating from an access port of a source node and terminating at an access port of a destination node, said each data channel further modulated by a respective wavekey of at least one dither tone;

said node controller configured to communicate nodal information through said control channel, said nodal information comprising, for each data channel of said link:

an identifier of a connection traversing said each data channel;

an identifier of a central wavelength of said each data channel; and

an identifier of a current wavekey modulating said central wavelength.

40. (New) The node of claim 39 further comprising a medium for storing other nodal information received from other nodes of said wavekey network.

41. (New) The node of claim 39 further comprising an interface to a management link connecting to a network controller of said wavekey network.

42. (New) The node of claim 39 wherein said node controller employs a modified version of a standardized protocol for communicating said nodal information along said link, said modified version structured to permit inclusion of said nodal information within control packets conforming to said standardized protocol.

43. (New) The node of claim 39 wherein said nodal information further comprises:

data characterizing a current software load of said each node; and

identifiers of structural components of said each node.